

**First Action Interview
Office Action Summary**

Application No.

10/585,121

Applicant(s)

MARUYAMA ET AL.

Examiner

HENG M. CHAN

Art Unit

1728

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The MAILING OR NOTIFICATION DATE of this communication appears on the cover sheet with the correspondence address.

THE SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE **ONE MONTH OR THIRTY (30) DAYS**, WHICHEVER IS LONGER, FROM THE MAILING OR NOTIFICATION DATE OF THIS COMMUNICATION.

This time period for reply is extendable under 37 CFR 1.136(a) for only ONE additional MONTH.

☐ Applicant's request to not have a first-action interview is acknowledged (or the time period for reply set forth in the Pre-Interview Communication has expired and the Office did not receive any reply).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2010 and interview conducted on 5 October 2010.
- 2) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 3) ☒ Claim(s) 1-20 is/are pending in the application.
3a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 4) ☐ Claim(s) _____ is/are allowed.
- 5) ☒ Claim(s) 1-20 is/are rejected.
- 6) ☐ Claim(s) _____ is/are objected to.
- 7) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 8) ☐ The specification is objected to by the Examiner.
- 9) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 10) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 11) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

Contact Information

Examiner's Telephone Number: (571)270-5859

Examiner's Typical Work Schedule: Monday to Friday, 9:00 am EST to 6:00 pm EST

Supervisor's Name: Jennifer K. Michener

Supervisor's Telephone Number: (571)272-1424

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. 20101005.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

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Notification of Rejection(s) and/or Objection(s)

#	Claim(s)	Reference(s) (if applicable)	Rejection Statutory Basis	Brief Explanation of Rejection
1	2-4, 6-8, 10, 12, and 17		claim objections	The instant claims should begin with "The..." to indicate that the subject matter was introduced in previous claims. A comma should be placed between "(C)" and "and" in the last line of claim 6 to avoid a run-on sentence.
2	3, 6-8, 12, 13, 15, and 17-20		112, 2nd	Claim 3 recites "the exchangeable inorganic ions" in lines 1 and 2. Claim 6 recites "the conductive substrate" in lines 1 and 2. There are insufficient antecedent bases for these limitation in the claims. (see continuation below)
3	1	U	102(b)	U teaches an electrolyte comprising an organically modified layered clay mineral, e.g. a montmorillonite modified with poly(oxypropylene) diamine (D-2000), and an ionic liquid, e.g. lithium triflate (see continuation below)
4	2, 3	U	102(b)/103	product-by-process claims, no structural differences. See MPEP § 2112.01. In this case, U teaches an organically modified layered clay mineral, D-2000 montmorillonite (title, abstract; introduction; page 9764 2nd paragraph).
5	1-20	N, U	103	N teaches an electrolyte for a photovoltaic device comprising an ionic liquid, e.g., (1-propyl-2,3-dimethylimidazolium iodide (C8H15N2I)), that is an imidazolium salt (page 4, paragraphs 2-4).

Expanded Discussion/Commentary

2		Claims 12, 13, and 15 are rejected for depending on the indefinite claim 3. Claims 7, 8, and 17-20 are rejected for depending on the indefinite claim 6.
3		(title, abstract; introduction; page 9764 2nd paragraph). The limitation "for a photovoltaic device" is a recitation of an intended use of the claimed invention in the preamble. See MPEP § 2111.02. In this case, since the prior art electrolyte comprises the claimed elements, the prior art electrolyte is considered to be capable of performing the intended use.
5		N does not expressly teach that the electrolyte comprises a layered clay mineral and/or an organically modified layered clay mineral. U teaches this in (title, abstract, conclusion). It would have been obvious to have added the claimed layered clay mineral for the benefits described in introduction and conclusion of U.
DATE: 10/6/2010		/HENG M CHAN/ Examiner, Art Unit 1728
		/Jennifer K. Michener/ Supervisory Patent Examiner, Art Unit 1728